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ABSTRACT

Student socioeconomic status (SES) and the perceptions of students' and teachers' expectations and attributions of responsibility for learning and their relationships to achievement were studied using linear structural equation modeling. Two models were developed and tested. One model included student expectations and attributions of responsibility as mediators between social class and achievement. This model was compared to one using teacher expectations and attributions of responsibility as mediators between social class and achievement. The population contained 5,829 third-grade students from 76 Louisiana public schools from all parts of the state and 250 teachers. Results of LISREL analysis on the student model suggest that there was a significant negative relationship between SES and student expectations. Student SES significantly affected student attribution of responsibility, and the path between SES and student achievement was significant. Student attribution of responsibility was a significant predictor of achievement. The relationship between SES and teacher expectations was positive and highly significant. However, teacher expectations were not a significant predictor of teacher attributions of responsibility, and teacher attributions of responsibility were not a significant predictor of achievement. Results indicate the need for more information about how teachers' attributions of responsibility can be affected and how this relates to instruction and student achievement. Two figures and two data tables are included. (SLD)

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SELF-FULFILLING PROPHESY AND ATTRIBUTION OF RESPONSIBILITY: IS THERE A CAUSAL LINK TO ACHIEVEMENT?

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The purpose of this study was to investigate student socioeconomic status, the perceptions of students' and teachers' expectations and attributions of responsibility for learning and their relationships to achievement. Two models were developed and tested using a linear structural equation modeling method. The first model included student expectations and attributions of responsibility as mediators between social class and achievement. This model was compared to a similar model using teacher expectations and attributions of responsibility as mediators between social class and achievement. The population in this study contained students from all socioeconomic contexts as well as geographic parts of the state of Louisiana. This study also employed the use of norm-referenced tests to measure student achievement rather than criterion referenced tests; thus, there is potentially more variance in the variable achievement.

Research findings about effective schools is one area of exceptional interest to educators and researchers. As Hallinger and Murphy pointed out (1985), policy analysis at the school level is becoming increasingly important. Early research on the effects of schooling found unequal academic achievement to be primarily a function of socioeconomic status. More recently, the major conclusion of effective schools research is that differences among schools do have an impact on student achievement (Madden, Lawson, and Sweet, 1976; Brookover and Lezotte, 1979; Rutter, 1979; Teddlie, C., Falkowski, C., Stringfield, S., Desselle, S., & Garvue, R., 1984). Research conducted primarily in urban

elementary schools, identifies schools whose students' scores on standardized tests are better than would be expected given their family background (Purkey and Smith, 1982).

Differences among schools that impact student achievement include differences in the leadership and in the climate of the schools. Teacher expectations are an often explored area of school climate. Glenn and McLean (1981), Rutter et al. (1979) and Brookover et al. (1979), all connect high expectations (or at least improved) to student achievement. Good's (1981) explanation of the effects of teachers' expectations is that teachers often treat low achievers differently from high achievers. Related to this is teachers' emphasis of academic performance (Teddlie et al., 1984). High expectations seem to translate into a push by teachers for student improvement. The relationship between this push and school effectiveness has been noted by Weber (1971), McDill and Rigsby (1973), and Brookover et al. (1978).

Merton (1948) discusses the notions of self-fulfilling prophesy in terms of the Thomas Theorem. According to Merton, a self-fulfilling prophesy occurs when a false definition of the situation evokes a new behavior which makes the original false conception come true. Rosenthal (1974) proposed that high expectations lead to greater reinforcing behavior than average performance expectations and more criticism after failure. This increased reinforcement is one mechanism through which teachers' prophesies or expectations are fulfilled. Attribution theory (Heider, 1958) predicts that the more personally responsible an

actor is held for an act, the greater the use of reinforcement feedback. Weiner et al. (1971) have proposed that an act must be seen by the reinforcing agent as caused by either the effort or the ability of the actor if reinforcement is to occur. Weiner et al. (1976) also argue that stability of causal attributions is related to expectancy of success and expectancy shifts. Cooper and Baron (1977) have shown a relationship between academic expectations and attributed responsibility. Elementary teachers believed that students for whom high expectations were held were more personally responsible for success than students for whom either average or low expectations were held. In this study the researchers explored the relationships between students' and teachers' expectations and attributions and of responsibility and their relationship to achievement.

METHODOLOGY

Through the use of structural equation modeling, this study investigated the relationships between a model using student socioeconomic status (SES), teacher academic expectations and attributed responsibility and student achievement and a model using student SES, student expectations and attributions of responsibility and student achievement. The research questions asked were: (1) Will there be significant relationships among student SES, student expectations and attributions of responsibility and student achievement? (2) Will there be

significant relationships among student SES, teacher expectations and teachers' attributions of responsibility for learning and student achievement? (3) How will these relationships compare between models?

Included in a sample of 76 public elementary schools in Louisiana were 250 teachers and 5,829 third grade students. The study explored the relationships between student achievement and a combination of SES, expectations and attributions of responsibility. Both of the models tested specified that SES influences expectations which in turn influence attributions of responsibility, which in turn influence achievement. The following terms have been defined for the purpose of this study.

Attribution of responsibility. Attribution of responsibility refers to the function of the perception of the relative contribution of four causal factors (ability, effort, task difficulty and luck) in the performance outcome.

Expectations: Expectations are categorized into two general types for this study: present and future.

Student Achievement: Student achievement refers to the scores on the Educational Development Series (EDS) a norm referenced test, which was administered to all of the third graders in the participating schools. The tests were developed by Scholastic Testing Service and included verbal, Reading, English and Mathematics.

Student Socioeconomic Status: This refers to student demographic characteristics which include the following: mothers' and fathers'

education, percentage of fathers who are professionals, and percentage of the student body that is white.

All of the possible variables that relate to achievement could not be included in the models but may be partially accounted for in the unexplained variance. The observable measures for expectations and attribution of responsibility came from selected items on the questionnaires given to the students and teachers in the sample. These items are listed in Tables 1 and 2 under "Variable" and were obtained from questions in the Louisiana School Effectiveness Study (Teddlie, et al, 1984). Figure 1 indicates which observable variables were used to measure the theoretical constructs. Student achievement was measured by the Educational Development Services (EDS), a norm-referenced test developed by the Scholastic Testing Service and administered to all third graders in the sample.

Linear structural relations (LISREL) analysis was employed to examine each of the models (Joreskog and Sorbom, 1984). LISREL involves the mathematical analysis and breakdown of the correlations between observed variables into estimates of the strength of the relationships among constructs in a theoretical system. Tables 1 and 2 illustrate the correlation matrices which were analyzed for the two models, student, teacher respectively. The LISREL model involves the use of two parts, the structural equation model and the measurement model. The structural equation model describes the theoretical causal relationships among the latent variables by means of a set of general linear equations.

TABLE 1 CORRELATION MATRIX FOR THE STUDENT MODEL

VARIABLE									
1-STUD. QUEST. 4	1.000								
2-STUD. QUEST. 5	.307	1.000							
3-STUD. QUEST. 6	.660	.284	1.000						
4-STUD. QUEST. 7	.214	.645	.217	1.000					
5-STUD. LOCCP	.131	.089	.025	.230	1.000				
6-MEQBSK	.286	.139	.176	.364	.417	1.000			
7-F1SESCH	.163	.076	.130	.294	.391	.727	1.000		
8-F2SESCH	.188	.378	.219	.594	.328	.330	.244	1.000	
9-MMOMED	.207	.021	.258	.135	.120	.669	.932	.124	1.000

TABLE 2 CORRELATION MATRIX FOR THE TEACHER MODEL

VARIABLE											
1-TEACH. QUEST. 19	1.000										
2-TEACH. QUEST. 20	.751	1.000									
3-TEACH. QUEST. 21	.312	.412	1.000								
4-TEACH. QUEST. 22	.481	.579	.564	1.000							
5-TEACH. QUEST. 23	.395	.555	.436	.859	1.000						
6-TEACH. QUEST. 24	.387	.520	.432	.740	.701	1.000					
7-TLOCCI	.277	.236	.243	.141	.157	.106	1.000				
8-MEQUABSK	.499	.424	.300	.409	.301	.248	.130	1.000			
9-F1SESCH	.566	.526	.449	.564	.446	.474	.236	.727	1.000		
10-F2SESCH	.244	.069	.004	.099	.175	.142	.216	.330	.244	1.000	
11-MMOMED	.521	.519	.441	.560	.498	.443	.270	.669	.932	.124	1.000

Figure 1 pictures the measurement model and the path coefficients for the student model. The measurement model describes the combination of the observed indicator variables into latent variables and allows evaluation of the measurement properties of such measures. In figure 1, the observed variables (X and Y) variables are enclosed in squares. These variables are called "observed variables" because they are directly measurable. Latent variables (E and N) variables are enclosed in ellipses. These latent variables are considered to be unobservable and thus cannot be measured directly. The exact nature of these variables can never be known first hand or be quantified directly, therefore the latent variables are estimated by observable measures. Figure 2 illustrates the measurement models and path coefficients for the teacher and principal models.

In Figure 1, the arrows between two variables indicate a postulated direct influence of one variable on another. Coefficients are associated to each arrow as follows. Arrow from E-variables to X-variables are denoted $\lambda(X)$. Arrows from the N-variables to Y-variables are denoted $\lambda(Y)$. Arrows from the N-variables to N-variables are denoted B. Arrows from the E-variable to N-variables are denoted Y.

Student SES is the independent variable in this model because no other variables are influencing it. Expectations, responsibility and achievement are all dependent variables because they are all preceded in the causal chain by other variables.

Goodness-of-fit indices indicated an acceptable fit of the

student model to the data with an index of .755. The index is scaled from 0 to 1, where 1 is a perfect fit. For the teacher model, the goodness-of-fit indices indicated an acceptable fit of the model with an index of .728.

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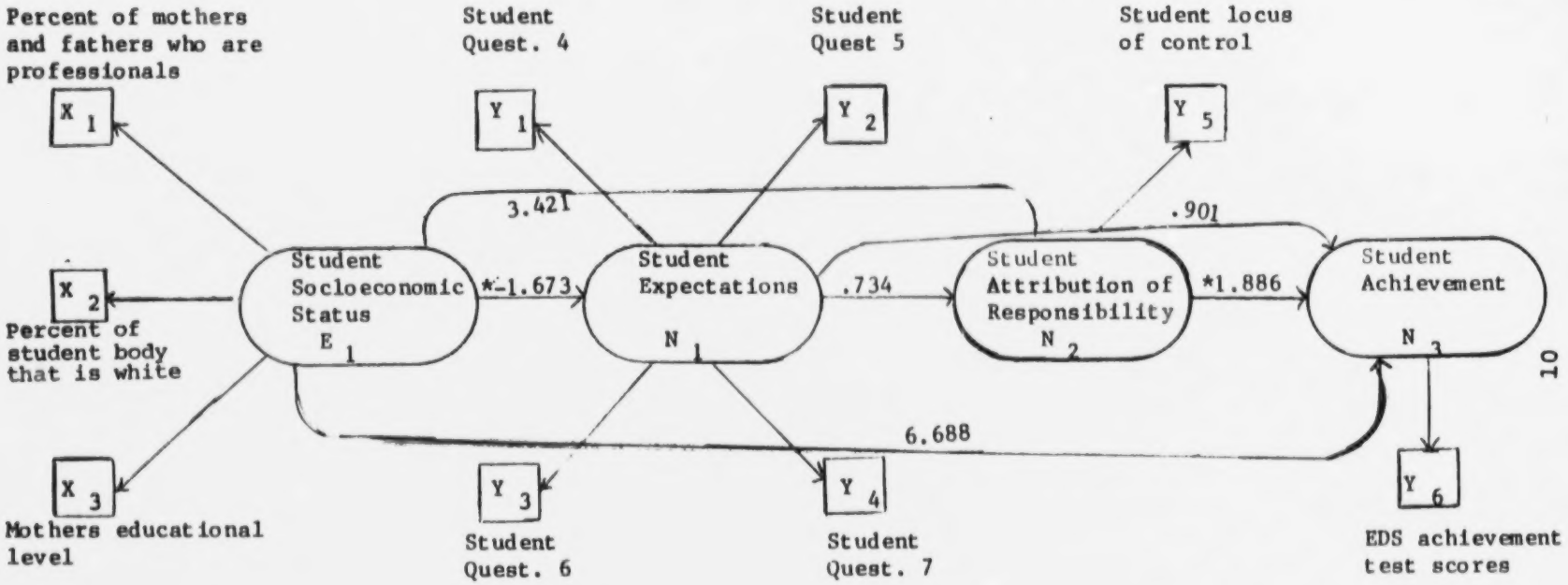
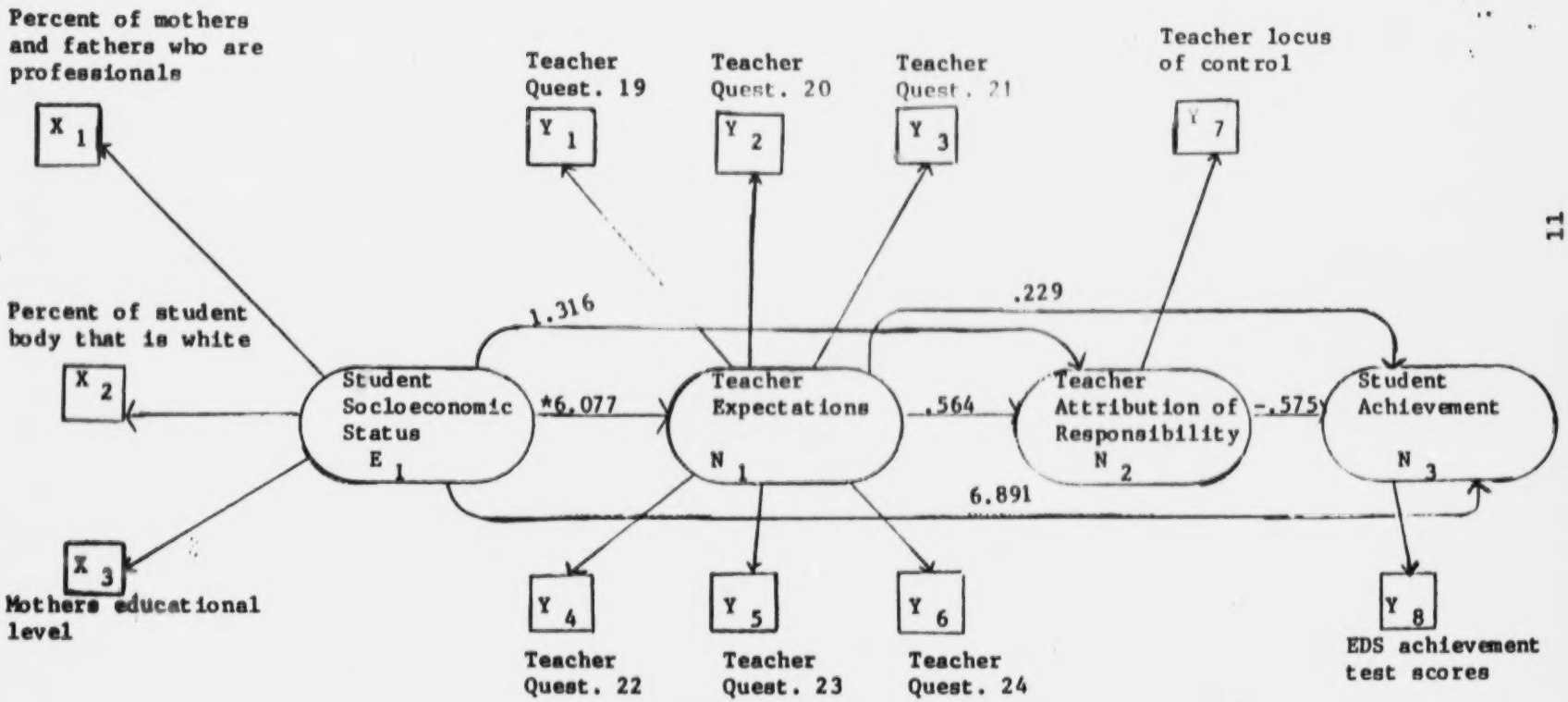
FIGURE 1
MEASUREMENT MODEL AND PATH COEFFICIENTS FOR THE STUDENT MODEL



* P ⟨ .05. For all tests of significance the critical value for P ⟨ .05 = 1.645.

FIGURE 2
MEASUREMENT MODEL AND PATH COEFFICIENTS FOR THE TEACHER MODELS



* P < .05. For all tests of significance the critical value for P < .05 = 1.645.

Summary of Findings

Two research questions ere investigated in the study. The first question asked if there was a relationship-p among student socioeconomic status, student expectations, student attribution of responsibility for learning and student achievement. The results of the LISREL analyses on the student model indicated that there was a significant negative relationship between SES and student expectations. Student SES significantly affected student attribution of responsibility. The path between SES and student achievement was significant. The student model also indicated that student expectations did not significantly affect student attribution of responsibility. Student attribution of responsibility was a significant predictor of achievement. Path coefficients for the student model are depicted in Figure 1.

The second question asked if there was a relationship among student SES, teacher expectations, teacher attribution of responsibility for learning and student achievement. In the teacher model only two significant relationships were observed. The relationship between student SES and teacher expectations was positive and highly significant, as was the relationship between student SES and achievement. Teacher expectations was not a significant predictor of teacher attributions of responsibility, nor was teacher attributions of responsibility a significant predictor of achievement. Path coefficients for the teacher model are depicted in Figure 2.

Six questions were included in the analysis of teacher

expectations for the student: (1) expected achievements of the school, (2) expected achievement of the class (3) percent you expect to finish high school, (5) percent you expect to complete college (6) percent of class capable of getting A's and B's. The most striking difference between the teacher and the student models was the importance of socioeconomic characteristics of the students' parents had in determining the teachers' educational expectations for the students.

The last question asked if the strength of the relationship varied depending on whether it was in the student or teacher model. Results of the LISREL analyses indicated differences among the models in the relationship between SES and expectations. It was much stronger and positively significant in the teacher model, while being less strong and negatively significant in the student models. Students expect to go further in school than their teachers expect them to go. Students at this age level (third grade) tend to be unrealistically optimistic about their educational futures while teachers tend to be more realistic.

As was found in the Coleman et al. study (1966, student SES was by far the best single predictor of student achievement in the student, teacher and principal models. Looking beyond student SES and its direct link to achievement, there were three important findings. The effect of SES on expectations was the opposite of what would be expected in the student model. Only in the student model was SES a significant negative predictor of expectations. That is, the higher the socioeconomic status was, the lower the

expectations were. Students at this age do not see the linkage between SES and achievement; thus, their expectations are not as strongly affected by SES. In the teacher model the relationship between SES and expectations was strong and positively significant, as expected.

These date confirm Berube's (1984) conclusion that "the concept of social background is deeply embedded in the psyche of many teachers as an all too ready excuse for the academic failure of children who are poor" (p. 4). It could also help to explain why the variable, attribution of responsibility, in the teacher model was not a good predictor of achievement. If teachers feel that student SES is the only important factor predicting achievement, they will not feel that it is within their power to make a difference. That is, they will not "attribute the responsibility for achievement" to themselves.

Why is it that SES appears to have the opposite effect on student expectations than it has on teacher expectations? The school effectiveness literature often compares characteristics of low SES schools to high SES schools (Hallinger & Murphy, 1985 and Teddlie et al., 1984). In this study the researchers did not distinguish between high and low SES schools. It is possible that students in low SES schools tend to compare themselves to each other at their grade level in a more positive manner than do the teachers. Students at this age also do not see the linkage between SES and achievement, thus their expectations are not as strongly affected by SES.

In an attempt to explain this negative relationship between student SES and student expectations an appeal to the social-psychological literature was made. Students at that age tend to compare themselves to their peer group and family members. Third graders are not as apt to compare themselves to other classes of people as are adults or to be realistic about their capabilities. In fact, date from the Louisiana School Effectiveness Study indicate that most third grade students expect to go to college (Teddlie et al., 1984). Jules Henry noted (in Spindler, 1969) "the emotions and attitudes of prepubertal children in our culture are not, on the whole directed toward generalized social goals, but focused on peer groups and family" (p.192). Even the curriculum at this stage is developed in a manner that tends to sustain these attitudes and feelings so that ultimately they are reinforced.

A second major finding is that the relationship between student SES and attribution of responsibility was found to be significant only in the student model. It is possible that due to the strong linkage that exists between student SES and teacher and expectations for the students, teachers feel that they have no responsibility in affecting scores. If they see student SES as the overwhelming factor related to achievement, they may feel helpless.

A third interesting finding was that the relationship between attribution of responsibility and student achievement was significant in the student model but not in the teacher model. In the teacher model there are strong linkages between student SES and achievement and SES and teacher expectations, but there is no

significant relationship between attribution of responsibility and achievement. This could mean that teachers perceive SES to be the main factor affecting achievement thus they do not have to take personal responsibility for student achievement.

It can help to refer to the concept and measurement of attribution of responsibility. In this study attribution of responsibility was measured by locus of control items in the questionnaires given to students and teachers. The concept of internal/external locus of control was developed by Rotter (1958). It is closely related to Melvin Seeman's description of alienation. Teachers may feel this feeling of powerlessness which Seeman defines as: "the expectancy or probability held by the individual that his own behavior cannot determine the occurrence of outcomes, or reinforcements, he seeks" (in Buford, 1969, p. 63). If teachers perceive that SES is the only variable affecting achievement, they may feel this sense of powerlessness to effect change. Seeman also refers to another type of alienation called a condition of normlessness which he defines as "a high expectancy that socially unapproved behaviors are required to achieve given goals" (in Buford, 1969, p. 70). This may occur in a situation where the disciplining effect of collective standards or norms has been weakened. For example, in educational systems where the goal may be high test scores and the means for attainment are not available, normlessness could develop. The most effective procedures, whether they are legitimate or not, could become typically preferred to the prescribed curriculum. In Louisiana, where the sample of schools

was drawn for this study, a great emphasis on rising test scores has been placed on local school systems and teachers.

In summary, in the student model the linkages are evident between student SES and student expectations and between student attribution of responsibility and student achievement. SES is a factor which negatively affects expectations. On the other hand, in the teacher model SES overwhelmingly affected teacher expectations but the linkages did not continue as predicted. There is a need for more information about how teachers' attributions of responsibility can be affected and how this relates to the delivery of instruction and student achievement.

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